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United Nations Industrial Development Organization

ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP),

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

PROVISIONAL AGENDA
(RN-SHP/TAG.1/1)

1. Opening of the Meeting
2. Election of Officers
3. Adoption of Agenda
4. Review and evaluation of activities during 1982/83/84
5. Guidelines for future activities of the RN-SHP
   (a) Proposal for 1984/85/86 by the Interim Co-ordinator;
   (b) Priority subject areas and projects
   (c) Decentralization of RN-SHP activities
   (d) Strengthening of network activities
6. Financial resources
7. Designation of national subfocal points for SHP
8. Technical advisory group membership and meetings
9. Recommendations
10. Date and venue of next meeting
11. Other matters
12. Adoption of the Report
13. Closure of the Meeting

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ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

ANNOTATED PROVISIONAL AGENDA
(RN-SHP/TAG.1/)

Agenda item

1. Opening of the meeting

   Short welcome addresses will be made by the REDP Senior Co-ordinator, as well as representatives from UNDP, ESCAP, UNIDO and the Interim Co-ordinator of RN-SHP, followed by the official opening by a senior official of the Government of P.R. China.

2. Election of officers

   It is suggested that a chairman and a rapporteur be elected.

3. Adoption of agenda

   The provisional agenda will be considered and adopted.

4. Review and evaluation of activities during 1982/1983/1984

   The Interim Co-ordinator of the RN-SHP will make a presentation of the activities carried out during the period 1982/1983/1984 based upon a report (RN-SHP/TAG.1/). The TAG may wish to evaluate the activities carried out and take into account such experiences for considering the future work programme of RN-SHP.

5. Guidelines for future activities of RN-SHP

(a) Proposal for 1984/85/86 by the Interim Co-ordinator
The Interim Co-ordinator of RN-SHP will outline the future work programme in accordance with document (RN-SHP/TAG.1/). The TAG may wish to review the proposal submitted in conjunction with the aspects to be discussed under 5b., 5c. and 5d., and recommend and endorse a work programme for 1984/1985/1986.

(b) Priority subject areas and projects

The participants have been requested to give considerations to priority subject areas and projects relevant to their national needs and of regional significance. The participants will make individual presentations of their papers, after which a list will be prepared in the order of priority. The TAG may wish to consider and recommend it as a general framework for future activities.

(c) Decentralization of RN-SHP activities

Since the RN-SHP is not to be viewed as an institution but as representing arrangements for co-operative activities, it is necessary to decentralize some of the RN-SHP activities for implementation by participating member countries. This would also be necessary from the view point that the RN-SHP Secretariat has a capacity limit for preparing necessary documentation and background papers and for organizing a large number of workshops and training courses. The TAG may wish to identify appropriate and suitable projects which implementation could be entrusted to other member countries, reflecting the capability and capacity for them to act as host organization with the co-operation of the RN-SHP Secretariat. The TAG participants have been requested to prepare a paper on the subject and such proposals could be used as basis for discussions.

(d) Strenghtening of Network activities

A review will be made of the existing and planned co-operative activities of RN-SHP. Participants were invited to propose in their papers priority areas of common nature for joint co-operative research. In addition, consideration should be given to the methods of organizing and implementing such joint research projects.

6. Financial resources

In view of the limited financial resources available, it is important that they be utilized to achieve maximum impact anticipated. In this respect, the TAG may wish to consider and recommend the reallocation of funds available under Phase-II of the REDP as well as other sources of funds that are available. Meanwhile, in order to ensure maximum benefit with duplicating effects particularly towards strengthening the technological capabilities in the member countries for promoting the development, application and operation of small hydropower, it is necessary to secure additional sources of funding. Towards this end, considerations should be given to formulate and prepare bankable project documents that could be presented in a systematic manner to potential donor agencies and organizations, including recommendations for an organizational mechanism required for such purpose.

7. Designation of national sub-focal points

The Regional Network for Small Hydropower is based upon the philosophy of activating, stimulating and promoting interaction between and among those agencies and organizations entrusted with small hydropower development, application and operation in the member countries. From this view point, the nomination of national sub-focal points for small hydropower is a precondition for affective and fruitful activities. The TAG may wish to consider ways and means of urging the REDP focal points who have not yet nominated their sub-focal points to do so as soon as possible.

Furthermore, in view of the fact that still a considerable amount of assistance and co-operation is required from industrialized countries as well as those developing countries outside the ESCAP region and other international organizations providing such assistance, the TAG may wish to consider the possibility of allowing such entities to be invited to participate in the SHP activities as "Associate Members" of the RN-SHP.

8. Technical Advisory Group (TAG)

In view of the limited financial resources presently earmarked for the TAG meetings, the number of TAG member participants who can be invited at project costs are extremely limited. Document number RN-SHP/TAG.1/ provides alternative proposals on this subject.

9. Recommendations

Recommendations of the TAG will be submitted through the REDP Senior Co-ordinator to the REDP Steering Committeefor their consideration and endorsement. It is therefore necessary to prepare in a concise and clear manner the recommendations stemming the present TAG Meeting, together with information on the relevant financial implications with the aim of securing appropriate support in implementing the proposed activities.

10. Date and venue of next meeting

The TAG may wish to indicate the date and venue of the Second TAG Meeting, also taking into account the conclusions of item 8. above.

11. Other matters

The participants may wish to propose any other matters for consideration by the TAG.

12. Adoption of the Report

A draft report will be prepared, in English, for consideration by the participants at the meeting and for adopting it, subject to relevant modifications and changes. The final report will be prepared thenafter by the Secretariat for appropriate distribution.

13. Closure of the Meeting

A short closing ceremony will be held.

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United Nations Industrial Development Organization

ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

Technical Advisory Group
Membership and Meetings*

(Agenda item 8)

prepared by

UNIDO Secretariat

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Technical Advisory Group: Membership and Meetings

The financial resources currently allocated for TAG meetings are:

1984 - US$ 7,500
1985 - US$ 7,500
1986 - US$ 7,000

It is apparent from the planning and cost estimates for the First TAG Meeting that these allocations are not commensurate with the objective of strong participation at the TAG meetings. With the current membership of the RN-SHP the estimated cost for the first meeting is in excess of US$ 20,000. As the membership of the RN-SHP expands, the cost of future meetings composed of full membership will increase accordingly.

The options available are:

(a) to obtain additional sources of funding for TAG meetings
(b) to hold TAG meetings bi- or tri-annually
(c) to have TAG meetings with only selected country participation.

The advantages of option (a) are that all countries concerned are able to fully participate in the work of the TAG and through it have a closer involvement with the activities of the RN-SHP. The difficulty would be finding the additional financial resources of approx. US$ 15,000 a year. Secondly, consideration must be given to the value of utilizing such additional funding to the substantive activities of the RN-SHP programme itself - training, R&D, etc.

Option (b) has the major disadvantage of long intervals between meetings, which would tend to mean that participants would "lose touch" with the work of the RN-SHP and the opinions of other participants. In addition, the Interim Co-ordinator of the RN-SHP, as well as the Senior Co-ordinator of the REDP, would be deprived of receiving regular guidance, advice and support from the TAG, which is in fact the original mandate given to the TAG.

The difficulty with option (c) would be on the selection of countries to participate in the TAG meetings. Secondly, with the current budget allocation we would be limited to around 3-4 participants.

The TAG participants may wish to consider a combination of all 3 options, that is try to obtain some additional funding to hold full TAG meetings bi-annually, with a smaller meeting held in alternate years. This meeting would have a revolving membership with a core-membership of say 3-4 countries for a term of 4 years to ensure continuity, and another 3-4 countries for a term of 2 years, selected from among other member countries.

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ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

Decentralization of RN-SHP Activities*

(Agenda item 5(c))

prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

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Purpose

It has been suggested that some RN-SHP Activities could be "sub-contracted" out under HRC's overall guidance to member SHP Focal Points for implementation to strengthen the "Regional" sense of the RN-SHP and also to avoid over-concentration at HRC. This report discusses this concept and puts forward some suggestions for discussion.

Background

HRC has been established for 3 years now and serves both as a national institution as well as a Regional Centre for SHP activities. In this period, the Centre has not only built up its capabilities as the Interim Secretariat but has achieved positive results in establishing the Regional Network, with 10 Focal Points already nominated. These 10 countries represent most of the Asia-Pacific region where active SHP programme exist.

Since a network has now been formed, then, following the spirit of the recommendation of the first RFDP Steering Committee (Bangkok, May 1983) that "the RN-SHP was not to be viewed as an institution but as representing a co-operative arrangement for carrying out specific activities", it may now be an appropriate time to consider decentralization of the implementation of some RN-SHP activities. In this way, it will be possible to make some headway in achieving the objective given in the RFDP Phase II project document that "This activity (i.e. funding for RN-SHP) should result in voluntary working of co-operative arrangements among members of RN-SHP".

Present situation

So far, all Secretariat functions have been carried out by HRC, with the help of UNIDO, UNDP and ESCAP/REDP when necessary. Despite limited staff numbers and incomplete office buildings, HRC has managed to carry out its duties within the given time and budget constraints. With the completion of Phase II buildings in about 1½ years' time, HRC's facilities and capabilities will be greatly improved.

Nevertheless, in order to achieve more involvement and active participation of all RN-SHP members, it has been suggested that some activities could be "sub-contracted" out under HRC's overall guidance to one or more member SHP Focal Points to implement with appropriate allocation of funds. These activities could include not only those listed in Report B, "Forecast of RN-SHP Activities 1984-1986", but also other projects considered of importance for the Region and for which little cash funding would be required.

Some suggested activities for decentralized implementation
(for discussion)

1) --- one Training/Workshop: previous Workshops have been held in Hangzhou, China. A future workshop could be hosted and organized by another RN-SHP Focal Point outside China, with assistance from HRC as required, such as for preparation of teaching materials or selection of lecturers;
2) --- revolving training courses: just as the countries to be chosen will be on a revolving basis, so the main organizing Focal Point could also be on a revolving basis. This should also encourage involvement of a wider spread of lecturers;
3) --- Co-operative R+D projects: where a country is particularly strong or has a strong interest in an area chosen for an R+D project, then it is reasonable for that country's RN-SHP Focal Point to undertake the project management, rather than HRC. The project need not strictly be an R+D project, but could be, for example, the production of a design manual on SHP stations, or one aspect

of SHP technology. Such projects would not require large amounts of cash funding since they would rely on voluntary contributions of staff time for writing particular sections of the manual; yet they would be of immense value in stimulating SHP construction in the region and elsewhere. One topic suggested has been a design manual of typical designs for low-cost simplified SHP civil construction work.

Follow-up action

We hope that participants in the TAG meeting will give their full consideration to the above proposals and make a realistic assessment of what specific activities their own country could organize or be responsible for. These are only tentative proposals, and constructive criticism or suggestions are welcome.

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ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

Review and Evaluation of Activities during 1982/83/84 *

(Agenda item 4)

prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

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Purpose and coverage period

The purpose of this report is to provide background information on the setting-up of RN-SHP and to provide an overview of RN-SHP activities completed up to Nov. 1984, including those under REDP Phase I (but not Phase II)

Background and institutional aspects

The First Seminar Workshop (Sept. 1979, Nepal) and the Second Workshop (Oct/Nov 1980, Hangzhou-Manila) both highlighted the need for a Regional Centre for Small Hydro Power, to promote regional co-operation between and among Asia-Pacific countries in particular. In response to recommendations at these two workshops, the People's Republic of China decided to establish the Hangzhou Regional Centre (Asia-Pacific) for SHP, hereafter called HRC, with the support of UNDP, UNIDO and ESCAP, to serve both as the national institution for SHP activities as well as a regional centre. The project document for HRC was signed in Nov. 1981. Further details of its activities can be found in the HRC Brief Progress Report.

To discuss the work of the Regional Centre further, UNIDO, together with HRC and in cooperation with UNDP and ESCAP, organized a Senior Expert Group Meeting in July 1982. This meeting recommended the creation of an ESCAP SHP Network whose work would include the areas of R+D, Training, Information and Consultancy services. It also recommended that the RN-SHP Secretariat be located at HRC for an interim period. Furthermore, funds earmarked in the REDP for SHP activities were allocated to RN-SHP under REDP Phase I (1982-1983), and the activities of HRC and RN-SHP were to be assessed by a review meeting consisting of senior experts from the participating organizations, hence the necessity for the present TAG meeting.

On the basis of the findings and recommendations of the Senior Expert Group Meeting, the Third Workshop on SHP, Kuala Lumpur March 1983, drew up a tentative Work Programme. The recommendations of the Senior Expert Group Meeting were also endorsed by the first session of the REDP Steering Committee which met in Bangkok, May 1983. The Committee endorsed the proposal that HRC should act as the interim Secretariat of RN-SHP, with the Director of HRC serving as the Interim Co-ordinator. The Committee felt that RN-SHP was not to be viewed as an institution, but as representing a co-operative arrangement for carrying out specific activities. The REDP Steering Committee would provide overall guidance on network activities, assisted by the Technical Advisory Group. This group would be responsible for the formulation of project activities and work programme.

The Second session of the REDP Steering Committee Bangkok, Aug.1984, also recommended support under REDP Phase II (1984-1986) for specific follow-up activities of RN-SHP. These are discussed in the document related to agenda item 5(a).

Establishment of HRC

Following the signing of the project document in Nov. 1981, the Chinese Government provided 2,000,000 RMB (1 Yuan RMB is about 0.4 US$) for the construction of Phase I buildings, together with salaries and overheads for staff as required. The number of staff is at present 60, of whom 30 are professional technical people. Complementing this, UNDP has provided US$ 400,000 for various items of equipment, as detailed in the Progress Report. Thus, a solid foundation has been laid for HRC to function as the RN-SHP Secretariat.

The Chinese Government lays particular importance on SHP development both in China itself and also in the Asia-Pacific region. Thus, it has allocated a further 4,000,000 RMB for Phase II buildings of floor area 10,000 m^2, to be completed the second half of 1986, including an up-to-date Centre of international standards. These new buildings will enable existing equipment to be utilized to the full, and improve our existing capabilities in the field of research, training and information services for the benefit of members of the RN-SHP network.

Review of RN-SHP Activities 1982-1984

A summary of HRC's work is contained in the brief Progress Report. Major RN-SHP Activities in the period 1982-Nov.1984 are given in Table 1, and participation in each completed activity is summarised in Table 2.

Considerable delays in securing funds were experienced in early 1984, leading to delays in carrying out some activities. It can be seen that items 8-12 are still under way, and are included in RN-SHP activities for 1985-1986, see separate report. Otherwise, the remaining items 1-7 have been completed satisfactorily with wide participation from throughout the region. In general, the activities have been in line with the tentative Work Programme discussed at the Third Workshop on SHP (March 1983).

Apart from the organization of specific activities, the Secretariat has devoted some time to the establishment of the Network i.e. seeking nominations from ESCAP member governments for the appointment of national SHP focal points. We are pleased to note that so far, 10 SHP Focal Points have been nominated, representing most Asia-Pacific countries active in the field of SHP (see Table 3 for a full list).

Table 1 RN-SHP Activities 1982-Nov. 1984

No.	Date	Activity	Responsible agency/ organization + cash funding*	Status
1	July 82	Senior Expert Group Meeting on the Creation of a Regional Network System and the Assessment of Priority Needs on Research, Development and Training in the field of Small/Mini Hydro Power Generation Hangzhou, China	UNDP, UNIDO, ESCAP } $30,000 HRC 30,000 RMB (1 Yuan RMB about 0.4$)	Completed
2	May-Jun 83	1st Training Workshop on SHP for the Asia-Pacific Region, Hangzhou, China	UNDP, UNIDO, ESCAP/REDP } $46,000 RCTT-Sponsored one participant HRC 30,000 RMB	Completed
3	Sept 84	2nd Training Workshop on SHP for the Asia-Pacific Region, Hangzhou, China	UNDP, UNIDO } $36,000 HRC 10,000 RMB	Completed
4	Oct/Nov 1984	RN-SHP Secretariat Consultation Mission	UNIDO ESCAP/REDP $15,000 selected focal points	Completed
5	May 84	Publication of 1st Newsletter	UNIDO HRC	Completed
6	Nov 84	Publication of 2nd Newsletter	UNDP/UNIDO $ 1,000 HRC $ 400	Completed

No.	Date	Activity	Responsible agency/ organization + cash funding*	Status
7	March 1984	TOKTEN Consultant - Prof.A.S. Tseng for advice on design and equipment for Panxi Telemetry project	UNDP	Completed
8	on-going	R + D project: Telemetry and Automation of Panxi Cascade Stations	UNDP / UNIDO } $78,000 HRC+relevant domestic organizations 500,000 RMB	Major equipment ordered; Station renovation started; software design in progress; installation on site planned for 2nd quarter 1985
9	on-going	R+D project:local assembly and application of low-cost Electronic Load Controllers at micro hydro power stations in the Asia-Pacific region	UNDP/UNIDO ESCAP/REDP $12,500 (Phase II, not used so far) ITDG selected focal points HRC ---- 20,000 RMB	ITDG support in form of kits and consultancy; Project proposal sent out to selected focal points mid-October; Project meeting planned for late 1984/early 1985; HRC has already fixed site location in China and manufacturer for local assembly

No.	Date	Activity	Responsible agency/ organization + cash funding*	Status
10	on-going	Compilation of rosters on regional experts, research organizations, equipment manufacturers etc	HRC national RN-SHP Focal Points amd other relevant organizations	Prelim questionnaires sent out to Focal Points 1984, but with slow response; will following-up in 1985
11	on-going	Compilation of video films on various aspects of SHP	HRC + national RN-SHP Focal Points	9 video films completed; survey of resources available in the region planned
12	on-going	TOKTEN Consultant-Dr.E.Chang as assistant to Director of HRC	UNDP	First contract began Sept 83 and has been completed; Second contract underway.

* Note Where no cash contribution is given against a given organization this indicates a contribution in kind. HRC's contributions and salaries (not included above) are sponsored by the Chinese Government and Secretariat expenses (from UNDP).

Table 2 Matrix of participants from Asia-Pacific region in RN-SHP activities completed 1982-Nov.1984

ESCAP	Activity, numbered as in Table 1					
Country	1	2	3	4	5	6
Afghanistan			1			
Bangladesh	1					
China	3	2	1	3	✓	✓
Fiji	1	1	1		✓	✓
India	1		1			
Indonesia		2			✓	✓
Korea			1			
Malaysia	1	3	2		✓	
Mongolia			1			
Nepal	1	2	1	several	✓	✓
Pakistan	1	2			✓	✓
Papua New Guinea						✓
Philippines	1	3	2	several	✓	✓
Sri Lanka	1	1			✓	
Thailand	1	2	2	several	✓	✓
	12	18	13			

	1982	1983	1984 (to Oct.)
No. of working visits from UN officials:	16	6	4
Asia-Pacific visitors:	3	7	5
Others:	-	12	4
	19	25	23

Total: 67

Table 3 RN-SHP FOCAL POINTS revised Oct., 1984

China : Mr.Zhu Xiaozhang

Director
Hangzhou Regional Centre (Asia-Pacific) for SHP
PO Box 544
Hangzhou

Fiji : Mr.B.Dutt

The Permanent Secretary
Ministry of Energy and Mineral Resources
PO Box 2256
Government Buildings
Suva

Indonesia : Dr.A.Arismunandar

Director General of Energy
Ministry of Mines and Energy
Jakarta

Malaysia : Mr.Jaluddin bin Zainuddin

General Manager
Dept. of Mini Hydro
National Electricity Board, 129 Jalan Bangsar
Kuala Lumpur

Nepal : Mr.A.K.Shrestha

Project Director
Small Hydro Development Board
Kathmandu

Pakistan : Mr.M.Sohail Qureshi

Director General Energy Resources
Secretary National Energy Policy Committee
Ministry of Petroleum and Natural Resources
Islamabad

Papua New Guinea : Mr.Chris Cheatham

Power Systems Planner,
Energy Planning Unit
Dept. of Minerals & Energy
PO Box 2352
Konedobu

Philippines : Ms.Z.A.Santos

Executive Director
Mini Hydro Development Office
National Electrification Administration
1050 Quezon Ave, Quezon City

Sri Lanka : Secretary, Ministry of Power and Energy

PO Box 576
Colombo

Thailand : Mr.Prapath Premmani

Secretary General
National Energy Administration
Pibultham Villa
Kasatsuk Bridge
Bangkok

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Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11-13 December 1984

Proposal for 1984/85/86*

(Agenda item 5(a))

prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

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Purpose and coverage period

This report covers activities to be carried out under two major sources of project funding:

1) REDP Phase II (Jan 1984 for 3 years) RAS/84/001/C/01/53
   REDP $100,000
2) UNDP (1985-1986) RAS/80/033/H/01/37
   UNDP $200,000

Besides the above, the Chinese government sponsors RN-SHP activities by funding of HRC as required.

Background

Following the establishment of HRC and the start of RN-SHP activities, some of which were funded under REDP Phase I in the previous period 1982-1984, follow-up support under REDP Phase II has been agreed with the signing of the project document (RAS/84/001/C/01/53) on 18 July 1984. Taking note of the expert group meetings in Hangzhou and Kuala Lumpur, Phase II will support certain specific activities that would enable HRC to attract additional funds from other agencies in order to carry out the work plan. Our RN-SHP activities are particularly relevant to Phase II since this phase will place special emphasis on energy use in the rural sector. The allocation of $100,000 spread over 3 years is to be implemented by UNIDO as the lead agency through a sub-contracting arrangement.

In addition to REDP Phase II funds, UNDP has given an additional allocation under RAS/80/033/H/01/37 to assist in the implementation of

top priority programmes/projects of the work programme for 1985-1986. The project revision was signed on 13 Aug 1984.

As in previous years, the Chinese government will continue to provide funding for HRC, and the annual level for the next few years is anticipated to be about Y200,000RMB,(1 Yuan RMB is about $0.4). Additionally, the Ministry of Water Resources and Electric Power has allocated Y4,000,000RMB for the construction of a new 14-storey office block/training centre plus auxiliary buildings, to be completed in the second half of 1986.

Forecast of 1984-1986 Activities

The activities under REDP Phase II and UNDP funding are considered separately below. However, common to all activities is the need for positive support from a sound network of SHP Focal Points, and for co-operative efforts to finalise the work programme so that it will have maximum impact in the ESCAP region. Thus, in reading through the proposed list of activities we hope SHP Focal Point representatives will note their needs and capabilities in each particular area, and raise these for discussion at the TAG meeting.

Activities under REDP Phase II 1984-86

Table 1a is taken from the REDP Phase II document (p.51), listing 4 specific activities to be supported. Although as much preparatory work was done as possible, there has been an inevitable delay in starting the 1984 activities since the project document was not signed till July 1984, and the 1984 allocation of $35,000 was only received by UNIDO in October 1984 after finalization of sub-contracting arrangements. This has necessitated a slight rescheduling of activities, and this is shown in Table 1b.

The first activity in Table 1, the 1984 TAG meeting, will be held between 11-13 December 1984 (instead of July as previously scheduled), and if funds are insufficient, it is suggested that no TAG meeting is held in 1985.

The second item, information work, is on-going as described in Report A, Review of 1982-1984 activities, though this is an area requiring positive support not only from RN-SHP Focal Points but also from related agencies and organizations active in the information field to avoid unnecessary duplication of effort, see also following section on UNDP inputs. As regards the revolving training courses, the 1984 allocation is being used for preparatory work, and this is incorporated in the Terms of Reference of the Secretariat Consultations Mission Oct/Nov 1984. On the basis of these consultations, and discussion at the TAG meeting, we hope to implement the revolving training courses as planned in 1985 and 1986.

The final item listed, co-operative research and development projects, is already under consideration and suggestions for relevant topics are welcome. The REDP Phase II 1984 allocation of $12,500 has already been earmarked for the "local assembly and application of electronic load controllers" project, which will involve 2 to 3 Asia-Pacific countries. Furthermore, ITDG,UK, has agreed to co-sponsor this project, and preparations are under way for a co-operative research group meeting to be held as soon as possible to determine the project direction for 1985. On the Chinese side, the Chinese government has allocated Y20,000RMB, and HRC has already signed a contract with a local manufacturer for the assembly of the 60kW electronic load controller kits, to be tested at 2 or 3 SHP stations in the Region.

Activities under UNDP additional allocation 1985-1986

1984 activities funded by UNDP have already been considered in Report A. The work programme for 1985-1986 was drawn up at a tripartite meeting (Mr. Yongtu Long, UNDP New York; Mr. Zhu Xiaozhang, Interim Co-ordinator RN-SHP, Hangzhou; Messrs Y. de San and A. Sissingh, UNDP Beijing; Mr. H.W. Pack, UNIDO Vienna) held on 20-21 June 1984 at UNDP Beijing, and is given in Table 2. The proposed time schedule for implementing the activities is shown in Table 3. Activity J, Panxi telemetry project, is listed in Table 3 as an on-going project, though no UNDP allocation for 1985-1986 has been provided. Chinese government funds will be used to meet local project expenses.

Insufficient funding

From Table 2, it can be seen that several items still require funding. Furthermore, additional funds will be required to develop R+D projects should initial results prove promising, and also to supplement REDP funds for TAG meetings if these are to be held annually with a substantial attendance. Seeking funds from alternative sources is the subject of a separate report.

Table 1a

DETAILED WORK PLAN FOR PROJECT ACTIVITIES
REGIONAL ENERGY DEVELOPMENT PROGRAMME
(RAS/84/001)
1984 - 1986

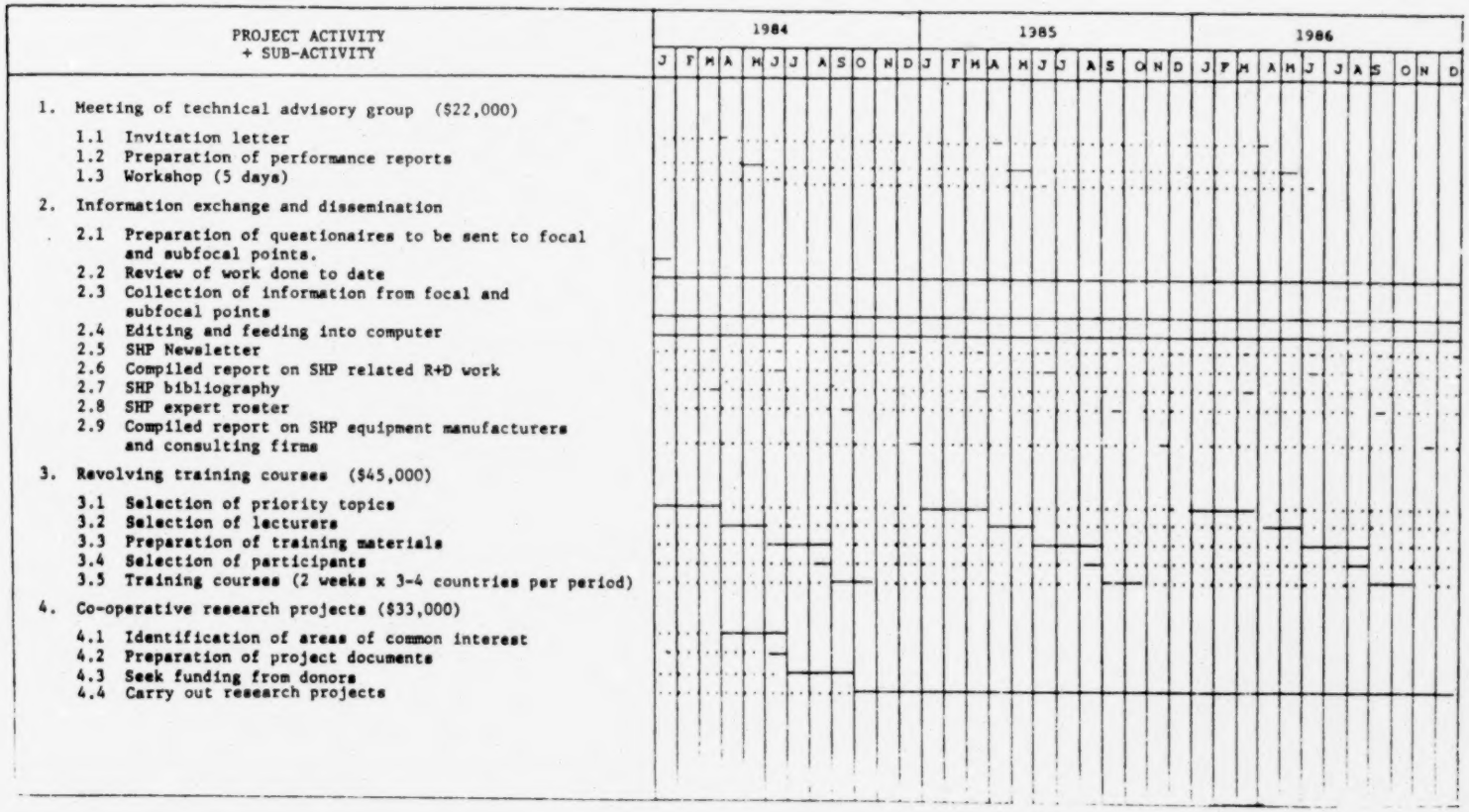
PROJECT ACTIVITY + SUB-ACTIVITY
1984
1985
1986
J F M A M J J A S O N D
1. Meeting of technical advisory group ($22,000)
1.1 Invitation letter
1.2 Preparation of performance reports
1.3 Workshop (5 days)
2. Information exchange and dissemination
2.1 Preparation of questionaires to be sent to focal and subfocal points.
2.2 Review of work done to date
2.3 Collection of information from focal and subfocal points
2.4 Editing and feeding into computer
2.5 SHP Newsletter
2.6 Compiled report on SHP related R+D work
2.7 SHP bibliography
2.8 SHP expert roster
2.9 Compiled report on SHP equipment manufacturers and consulting firms
3. Revolving training courses ($45,000)
3.1 Selection of priority topics
3.2 Selection of lecturers
3.3 Preparation of training materials
3.4 Selection of participants
3.5 Training courses (2 weeks x 3-4 countries per period)
4. Co-operative research projects ($33,000)
4.1 Identification of areas of common interest
4.2 Preparation of project documents
4.3 Seek funding from donors
4.4 Carry out research projects

Table 1b Revised schedule of RN-SHP activities under REDP Phase II

1984 - 1986 (Total funding 100,000 USD)

	1984 J F M A M J J A S O N D	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D
1. Meeting of technical advisory group			
1.1 Invitation letter	-		-
1.2 Preparation of performance reports	($22,000) ---	No meeting	Funds to be secured -----
1.3 Workshop (3-5 days)	11-13 Dec. -	if funds insufficient	-
2. Information exchange and dissemination			
2.1 Preparation of questionaires to be sent to focal and sub-focal points	-	-	
2.2 Review of work done to date	----------	----------	----------
2.3 Collection of information from focal and sub-focal points	----------	----------	----------

	1984 J F M A M J J A S O N D	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D
2.4 Editing and feeding into computer	----------	----------	----------
2.5 SHP Newsletter (UNDP funded)	Publicn .....*.....*..	...*.....*.....*.....*	....*.....*.....*.....*
2.6 Compilation and publication of SHP rosters (in conjunction with UNDP funding)	.....	.....*..	.....*..
3. Revolving training courses	Preparatory work Consultation Mission ($15,000) *		
3.1 Selection of priority topics		----	----
3.2 Selection of lecturers		--	--
3.3 Preparation of training materials		-------	------
3.4 Selection of participants		-	-

	1984 J F M A M J J A S O N D	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D
3.5 Training courses (e.g. 2 weeks x 3-4 countries per period)		$15,000 ---	$15,000 ---
4. Co-operative research projects			
4.1 Electronic load controller-local assembly and application	$12,500 (1984, REDP) ---------	$15,000 (1985, UNDP) ----------	---------
4.2 Identification of other areas of common interest	-	--	
4.3 Preparation of project documents		$12,500 -	
4.4 Seek funding from donors		-------	$8,000
4.5 Carry out research projects		---------	----------

Table 2 Work Programme for 1985-1986 with Cost Break-down (UNDP Input)

	US $ 1985	US $ 1986
A. Quarterly RN-SHP Newsletter by the Secretariat of RN-SHP (Issue Nos. 3-10 will be published); Printing costs.	5,000	5,000
B. Third Training Workshop on "Simple Low-cost Feasibility Study of Small Hydro Power" in 1985; most of the developing countries of ESCAP region are using a modified version of conventional hydro power feasibility study methods. Fourth Training Workshop on "Design of Small Hydro Power Stations particularly emphasizing simplified Low-cost Civil Construction Methods" in 1986	40,000	Funds to be secured
C. UNIDO advisory mission to RN-SHP headquarters in order to assist in the RN-SHP Secretariat activities	5,000	5,000
D. RN-SHP Secretariat Support activities	15,000	15,000
E. Up-dating and expansion of directories on R+D activities related to SHP; SHP bibliography; SHP experts roster; Engineering Consulting Companies related to SHP; SHP equipment manufacturers; SHP Stations in operation; SHP Training Activities in the Region; etc.	10,000	10,000
F. Short-term consultancy services, upon request, on R+D; local manufac' ring of SHP equipment; feasibility studies; SHP construction; equipment selection; etc.	5,000	5,000

G.	Video films for SHP training with scenarios on: -SHP activities in the Asia and Pacific region; -Hydraulic structures for low-head diversion-type SHP stations; -Local manufacturing of SHP equipment; -Dam and mixed-type plant for SHP; -Lay out of Small Hydro Power Houses,etc. There is an urgent need for appropriate audio/visual material to supplement the written texts in order to improve the quality of training workshops more effectively. It is aimed at policy-makers on one hand and technicians and engineers on the other.	50,000	Additional funds to be secured
H.	Co-operative research and development project on "Application and local assembly-ing of electronic load controllers at SHP stations in the ESCAP region" in 1985 (as continuation of 1984 activities).	15,000	
	Co-operative research and development project on "Selection of locally available materials and its utilization in an inexpensive way for the construction of SHP stations" in 1986.		15,000
I.	"High-level seminar on national SHP policies and regional co-operation" in conjunction with the inauguration ceremony of new RN-SHP office premises, in the fourth quarter of 1986.		Funds to be secured
		US $145,000	US $55,000

Total: US $200,000

Table 3 Forecast of RN-SHP activities 1985-1986

	Activity	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D
A.	RN-SHP Newsletter by the Secretariat of RN-SHP	* * * *	* * * *
B1.	Third Training Workshop on "Simple Low-cost Feasibility Study of Small Hydro Power";	*	
B2.	Fourth Training Workshop on "Design of Small Hydro Power Stations particularly emphasizing Simplified Low-cost Civil Construction Methods" in 1986.		* Funds to be secured
C.	UNIDO advisory mission to RN-SHP headquarters in order to assist in the RN-SHP Secretariat activities	No fixed date	No fixed date
D.	RN-SHP Secretariat Support activities	----------	----------
E.	Up-dating and expansion of directories on R+D activities related to SHP; SHP bibliography; SHP experts; Consulting Companies; equipment manufacturers; SHP Stations, Training Activities.	Publication ----------*	Publication ----------*
F.	Short-term consultancy services, upon request, on R+D; local manufacturing of SHP equipment; feasibility studies; SHP construction; equipment selection; etc.		
G.	Video films for SHP training	----- Survey of available films	

Activity	1985 J F M A M J J A S O N D	1986 J F M A M J J A S O N D
	----- Production of sample film by HRC	
	- Advisory Group Meeting	
	Scenario, shooting, editing of 3 video films	Additional funds to be secured
H1. Co-operative research and development project on electronic load controllers in 1985 (as continuation of 1984 activities).	----------	
H2. Co-operation research and development project on "Selection of locally available materials and its utilization of SHP stations" in 1986		----------
I. "High-level seminar on national SHP policies and regional co-operation" in conjunction with the inauguration ceremony of new PN-SHP office premises, in the fourth quarter of 1986		Funds to be secured -
J. Telemetry and automation of Panxi SHP cascade stations	----------	----------

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Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

Designation of National Subfocal Points for Small Hydropower*

(Agenda item 7)

prepared by

UNIDO Secretariat

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Designation of national sub-focal points for small hydropower

Nomination of Sub-Focal Points

The concept of technical co-operation among developing countries (TCDC) depends critically on the establishment of strong links between national groups engaged in the same activity. This allows the exchange of national experiences on a regional or international basis and the development of joint co-operative programmes. The Regional Network for Small Hydropower can only function effectively when it has full coverage and support of the country of the region through designated sub-focal points. Only then will it allow the exchange of experience and development of programmes based on the needs of the region in the field of small hydropower development between and among the officers directly engaged in small hydropower.

It is therefore essential for a smooth and effective functioning of the Regional Network that all member countries of REDP be urged to nominate a sub-focal point for Small Hydropower. This matter is, of course, within the prerogative of the regional REDP through its Senior Co-ordinator. Therefore TAG participants as a whole may wish to draft a resolution calling upon the REDP Senior Co-ordinator to urge REDP focal points who have not yet nominated sub-focal points for small hydropower to do so as soon as possible.

Associate Members of Regional Network for Small Hydropower

It is recognized that although progress is being made by the Regional Network for Small Hydropower, considerable assistance and co-operation could be obtained from sources located specifically in the industrialized countries. Also there are developing countries outside the region which have considerable experience and knowledge in small hydropower which could be of benefit to the programme. Therefore consideration might be given to the possibility of inviting selected countries outside the region to become associate members of the Regional Network for Small Hydropower. In this capacity, they would be able to participate in the general discussions but without voting rights. Their participation would be at their own costs.

In agenda item 6, reference was made to the need to present to funding agencies well-prepared project proposals in the field of small hydropower for securing appropriate financial support. By involving the funding agencies from an early stage of discussions as associate members of the Regional Network for Small Hydropower, it might facilitate the above procedure with a better chance of securing needed funds. These funding agencies might include international, regional and national bodies, such as the World Bank, the Asian Development Bank as well as national development aide organizations, such as:

USAID	United States of America
IDRC	Canada
ODA	United Kingdom
SIDA	Sweden
NORAD	Norway
DANIDA	Denmark
DSE	Federal Republic of Germany
SITA	Switzerland
JICA	Japan
	etc.

It might be possible to combine the associate membership of the industrialized countries with their respective funding agencies but this would require that the participant be knowledgeable both on the technical aspects of small hydropower as well as having direct links with the relevant donor organizations.

The TAG participants may wish to take a decision on this matter and make recommendations for action as appropriate.

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Priority Subject Areas and Projects*

(Agenda item 5(b))

prepared by

UNIDO Secretariat

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Priority subject areas and projects

At the Senior Expert Group, which met in Hangzhou/China in July 1982, considerations were given to subject areas and projects considered by the participants as high priority and of importance in the field of small-mini hydropower promotion, development and application. On the basis of such discussions, a matrix was prepared, after which a priority list was developed for R+D projects and areas of needs for building-up and strengthening human resource capacities among the member countries.

The recommendations of the Senior Expert Group were presented at the Third UNIDO Workshop on Small Hydropower which took place in Kuala Lumpur/Malaysia in March 1983. The Workshop considered the recommendations and endorsed the scope of the programme as the initial framework of activities to be undertaken by the RN-SHP.

The following are those subject areas identified:

a. Information exchange

b. Research and development

c. Human resources development

d. Local design and manufacture of small hydropower equipment

e. Advisory services.

Due to financial constraints, within the available funds from the REDP Phase-I (RAS/80/001) on the one hand, and the exhaustion of funds for the Hangzhou Regional Centre (HRC) under regional project RAS/80/033 on the other, it was possible to organize only one workshop in May 1983.

In order to support the co-operative efforts of the REDP Senior Co-ordinator through the slowly but steadily functioning RN-SHP, UNDP made an additional allocation of funds with which a Second Workshop was organized in September 1984 at the HRC Headquarters.

In view of the development of activities in the field of small-mini hydropower witnessed in the member countries, it was felt to be not only appropriate but necessary to update the priority list developed so that the RN-SHP may formulate a new work programme for 1985/86, which would be more accurately reflecting the priority needs.

On the basis of a questionnaire submitted to all ESCAP member countries, a survey is being carried out on this subject, and the results available will be presented for considerations and reference at the TAG meeting.

Meanwhile, the TAG-1 membership is covering most of the countries which are actively pursuing their small hydropower development programmes. It is therefore felt that a priority list developed at the TAG-1, would be reflecting quite accurately the priority subject areas and projects that might be taken up by the RN-SHP as their project activities during 1985/86 and beyond.

The priority list as developed and adopted by the TAG-1 is expected to be circulated to potential donor countries, agencies and organizations, for the purpose of seeking necessary financial support.

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FINANCIAL RESOURCES*

(Agenda item 6)

prepared by

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Financial Resources

1. During the implementation of Phase-I of the Regional Energy Development Programme (REDP)- RAS/80/001, the work programme of the Regional Network for Small Hydropower (RN-SHP) suffered much from the shortage of financial means. With the special considerations of UNDP Headquarters in New York as well as the UNDP Resident Representative's Office in Beijing and additional funds made available from other sources by ESCAP-Regional Centre for Technology Transfer (RCTT) and the UN Department for Technical Co-operation Development (UNDTCD), it was possible to carry out the following activities:

   a. Joint UNDP/UNIDO/ESCAP/China Senior Expert Group Meeting on the Creation of a Regional Network System and the Assessment of Priority Needs on Research Development and Training in the field of Small/Mini Hydropower Generation: 12-17 July 1982, Hangzhou/China;

   b. Third Workshop on Small Hydropower, RCTT/UNIDO/REDP/Government of Malaysia: 7-15 March 1983, Kuala Lumpur/Malaysia;

   c. First Training-Workshop on Mini-Small Hydropower:
   23 May - 24 June 1983, Hangzhou/China;

   d. Second Training Workshop on Hydrology for Small Hydropower Generation: 3-14 September 1984, Hangzhou/China.

2. Following the termination of Phase-I and entering into Phase-II of the REDP, the situation has improved slightly. However, there is still very serious financial constraints to satisfactorily carry out activities that respond to the priority needs and wishes of the member countries. It is therefore most important that the financial resources that are presently available be so utilized as to achieve the maximum impact anticipated with the broadest coverage of interest.

3. The present status of the resources allocated under project RAS/84/001 covers three main activities as follows:

		1984	1985	1986	(in US$)
a.	Organization of the Technical Advisory Group meetings in 1984, 1985 and 1986.	7.5*	7.5	7.5	22.000
b.	Revolving training courses.	15.0**	15.0	15.0	45.000
c.	Co-operative research projects.	12.5	12.5	8.0	33.000
				Total:	100.000

* The cost of the TAG Meeting for 1984 where eight countries were invited to attend, was approximately US$20,000, using up the total allocation for three years. For the TAG meetings in 1985 and 1986, resources will have to be secured from elsewhere, i.e. perhaps under project RAS/80/033.

** In 1984, the resources were utilized for organizing a Consultation Mission of senior officials of the RN-SHP Secretariat to three selected member countries.

4. Considerations might be given and recommendations made for the reallocation of funds since the figures, as can be seen from above, do not seem to realistically respond to the actual cost. These recommendations might include the following aspects:

a. TAG meetings: when and composition of participating countries, resources needed for 1985/1986.

b. With the meagre amount allocated for revolving training courses, it might be more useful to organize study-tour-type activities for a selected number of senior-middle management level staff of the member SHP sub-focal points.

c. Whether the resources available should be used for taking up projects in the sense of seed money to cover a larger number of project activities, or to utilize the funds for one project throughout.

5. Apart from the funds made available under RAS/84/001, UNDP has allocated US$200,000 under RAS/80/033 for the years 1985/1986. At present, the fund is scheduled to be utilized for the following purposes:

a.	RN-SHP newsletter	US$ 10,000
b.	Third training workshop on simple, low-cost feasibility study for small-mini hydropower (1985)	US$ 40,000
c.	UNIDO advisory missions to RN-SHP headquarters	US$ 10,000
d.	RN-SHP secretariat support activities	US$ 30,000
e.	Updating and expansion of directories related to small hydropower (approx. 7 volumes)	US$ 20,000
	R+D activities, bibliography, experts roster, engineering/consulting companies roster, equipment manufacturers roster, SHP stations in operation, ongoing training activities, etc.	
f.	Preparation of video films for SHP training as well as SHP publicity purposes	US$ 50,000
g.	Co-operative research and development projects	US$ 30,000
h.	Short-term consultancy services	US$ 10,000
	Total	US$200,000

6. The list, however, does not cover a number of activities which might preferably be covered, such as:

- Fourth training workshop on designing of SHP stations with specific emphasis on simplified, low-cost civil construction methods.
- High-level consultative meeting on small hydropower, national policies and reginal co-operation, in conjunction with the inauguration ceremony of the Hangzhou Regional Centre premises, functioning as the RN-SHP Headquarters.
- Study tour arrangements for medium-senior-level officials of the SHP sub-focal points (one group of 5-6 participants per year to visit 3-4 member countries). (See paragraph 4. above).

7. Additionally, considerations and recommendations might be made on the following points:

8. Video training films

Contrary to the original plans of requesting the RN-SHP Secretariat to dispatch a team to shoot material for a video training film, it might be more practical and cost-effective to decentralize the activities by entrusting part of the work to the national sub focal points for small hydropower, and have them participate in the preparation of the video training films. In this connection, the RN-SHP Secretariat has already initiated steps to collect information from the SHP sub-focal points on video films and/or 8-16-35 mm film material already available, by means of a questionnaire.

9. The data collected would be the basis for developing an action plan where each sub-focal point might be entrusted, if ready to do so, to prepare video film material, which would be forwarded to the RN-SHP Secretariat or elsewhere for appropriate editing into a suitable film. In this case, a general framework or a scenario will have to be prepared with a clear distinction of the subjects of the films in order that the series in total will appropriately serve the purpose of training and/or publicity aiming at the policy makers, the engineers or the public. Accordingly, the use of presently earmarked amount of US$50,000 might be reconsidered to enable appropriate steps to be initiated.

10. TAG meetings

The cost of the TAG meetings has been included in the project RAS/84/001. The total amount of US$22,000 was by far not sufficient to cover the cost of the First TAG Meeting, if the meeting was to be so organized as to have a reasonable representation of the member countries. Whereas the format and coverage of the TAG meeting is to be discussed elsewhere under another agenda item of the present Meeting, it would be necessary to earmark and secure funds necessary for the TAG meetings in 1985 and 1986. Considerations should be given and recommendations made on this matter.

11. Decentralization of RN-SHP activities

There is a need to decentralize the RN-SHP activities among the participating member countries in order, on the one hand, to give the activities a regional characteristic, and on the other hand, to lessen the heavy workload of the RN-SHP Secretariat involved in preparing specific activities, particularly as far as the preparation of documents is concerned.

12. Such decentralized activities which will be carried out under the umbrella guidance of the RN-SHP, will be organized by the respective, selected host government organizations (national focal points), jointly with the RN-SHP Secretariat. If not all, a major portion of the cost would have to be covered by the RN-SHP. In case extrabudgetary means cannot be secured, such costs would have to be charged to the project budget.

13. Extrabudgetary resources

Since it is unreasonable to expect that UNDP funds would suffice to cover RN-SHP activities, it is very important to seek and secure additional sources of funding. In this connection, a number of donor countries have unofficially expressed their interest to sympathically consider financial support to projects thought to be of high priority. It would therefore be necessary to formulate and prepare "bankable project documents" that could be presented to the potential donor agencies and organizations for their considerations.

14. A mechanism to ensure that these project documents be prepared and submitted in a continuous and systematic manner should be developed. Recommendations to this effect would be required.

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STRENGTHENING OF NETWORK ACTIVITIES*

Agenda item 5(d)

Prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

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1. Background to the establishment of the RN-SHP

There has been increasing activity in the field of new and renewable sources of energy in the past decade, with small hydro power (SHP) emerging as a major practicable source. This increased activity in countries and regions all over the world necessitates new mechanisms for information and technology transfer at national, regional and even global levels. Thus, the concept of networking has emerged to maximise use of existing resources and help stimulate development in developing countries.

A network for SHP in the Asia-Pacific region specifically has been discussed since the First Seminar/Workshop in Kathmandu, Sept. 1979, and concrete proposals were put forward at the Senior Expert Group Meeting, July 1982. The RN-SHP received official endorsement at the First REDP Steering Committee, May 1983, and since then the Interim Secretariat, located at Hangzhou Regional Centre, HRC, has been actively engaged in building up the Network and co-ordinating its activities.

2. What is the "Network" concept?

> "A network in technology development and transfer consists of a group of institutions in different countries, engaged in a particular field of activity or research, design and development, acting as a group to exchange experience and knowledge, to co-ordinate R+D and to minimise duplication, to undertake joint research, to offer training and advisory services to one another, to disseminate information and generally to co-operate to advance a technology and its application. Every participating institution will have an important role in the network; for convenience of operations, a specific aspect of the technology may be assigned to an institution ———."
>
> (from Senior Expert Group Meeting paper presented by RCTT)

Thus a Network is not a single insti tution but a working arrangement. Networking arrangements involve technical co-operation among several national institutions or focal points to achieve common goals. This form is now favoured, and represents a break from the past when UN regional projects took the form of central institutions, essentially created and run by organizations belonging to the UN system, and often with a post created for an international co-ordinator.

As regards management of the Network, the four main components are

a) the focal points
b) Governing Body
c) Technical Advisory Group
d) Co-ordinator

To initiate regional co-operation it is first and foremost imperative for each participating country to identify its national focal point which would be the basic unit of the networking arrangement. At a regional level, focal points liaise among themselves and also with the Secretariat, which co-ordinates activities, and provides centralized technical and management support. At a national level, the focal points liaise with relevant institutions in their own country. Thus, there are many lines of communication, many linkages, all of which are important to the overall efficient functioning of the network.

It has been proposed that the Governing Body is an inter-governmental body to ensure the Network receives adequate resources and attention at the highest level. However, this may be difficult to realise in practice. The TAG is made up of technical experts and helps in formulating the Network's Work Programme. The Co-ordinator is required to run the Secretariat to ensure smooth working of Network arrangements, and to support focal points in their work. The approach favoured now is to appoint a local rather than an international Co-ordinator.

There is no end of problems and tasks that need to be tackled in the field of SHP, as will be evident in discussions at this TAG meeting.

However, in the context of achieving common goals, the key is active member country participation and a spirit of give and take, of mutual exchange. Every member country will have its strong and weak points, and so can benefit from the Network, especially as we are now in the process of decentralizing activities.

3. How the RN-SHP works in practice at present

The RN-SHP has made steady progress in its 18 months of existence. It consists of 10 SHP Focal Points, with the Interim Secretariat located at China's Focal Point, HRC. The Interim Co-ordinator of the Secretariat is the Director of HRC. As given in Table 1 of "Review of Evaluation of Activities during 1982/83/84", 7 major activities have been completed, and 5 are on-going.

Up to the present, HRC, as Interim Secretariat, has organized and hosted most of the activities, with appropriate liaison and co-operation with SHP focal points and with backstopping by UNIDO and ESCAP-REDP. Participation in activities has come from 15 countries in the Region, covering most countries with active interest in SHP development.

The TAG (Technical Advisory Group) is a key component in the management of RN-SHP activities. It provides giudance and advice to the Interim Co-ordinator in drafting and implementing the Work Programme, and on future modifications to improve the RN-SHP effectiveness. There is no formal Governing Body at present, but some of the functions are undertaken by the REDP Steering Committee as an interim measure. Discussions are beginning on resolving the question of RN-SHP's and the Secretariat's legal status.

Although the RN-SHP exists, functions and has achieved a certain amount of recognition, several problem areas exist:

a) Not all relevant countries have nominated SHP focal points; regular communication channels have not yet been established with the Secretariat. However, with decentralization, then active participation of focal points will automatically ensue.
b) Funding is limited; REDP funds are meant to have a catalytic role, so other donor agencies should be approached; up till now, the major

proportion of funding has come only from UN agencies or member country Governments.

c) Linked to b) is the lack of formal links with donor agencies at a global level, or even with developed countries in the Asia-Pacific region.

The question of funding is addressed in a separate report.

4. Ways of Strengthening the Network

4.1. Follow-up action on nomination of SHP Focal Points

The Interim Co-ordinator has written to potential ESCAP member governments on several occasions for SHP Focal Point nominations together with follow-up action from UNDP offices and the REDP Senior Co-ordinator. While most countries in the Region with an active interest in SHP have joined the Network, there are still a few without official nominations.

Thus, the Secretariat proposes to make a fresh approach to the remaining countries, after the TAG meeting has concluded. With a definite Work Programme and sense of direction, the RN-SHP will be a more attractive proposition to be involved in.

The TAG meeting may also wish to suggest ways of improving communications between the Secretariat and Focal Points to ensure more active involvement.

4.2. Nomination of "Associate Members"

The TAG meeting may wish to consider including selected donor agencies and developed countries representatives in RN-SHP activities, in particular for future TAG meetings. This would serve to widen the perspective of future activities and also help to arouse interest in funding the 1985-86 and future Work Programmes. However, it should be borne in mind that funding for TAG meetings is itself restricted, so participation by donor agencies may also be limited.

The experience of ESCAP in including Associate Members should be examined.

4.3. Closer liaison with other networks and similar co-operative arrangements

We are aware of, but have little information on, other Regional Networks such as the BSW (Biogas, Solar and Wind Energy) Network. It would be useful to learn from their experiences, and collaborate further with them where appropriate. We feel UNIDO and ESCAP-REDP would be good sources of information in this respect.

Furthermore, co-operative arrangements such as those that exist in mini-hydro in the ASEAN countries have been particularly successful. It is recommended that the RN-SHP should learn from and strengthen ties with the ASEAN countries for our mutual benefit.

5. The Future

We are breaking new ground in forming a working RN-SHP that meets real needs and priorities. A sound start has been made with support from the UN and several focal points. There are inevitable teething problems, but they are not insurmountable, and we hope that solutions will arise from discussions at the First TAG meeting.

The Network could become a good example of South-South Co-operation. It can facilitate, in a much more direct way, Technical Co-operation among Developing Countries (TCDC). Also, opportunities would exist for external co-operation where appropriate. If we achieve widespread active, rather than token, participation in RN-SHP activities, then the end result will be not just the stimulation of SHP development in the Region, but also the development of a sense of self-reliance at both national and regional levels.

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FUTURE FUNDING OF REGIONAL NETWORK FOR SMALL HYDROPOWER ACTIVITIES*

Agenda item 6

Prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

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1. Present Situation

After a period of uncertainty at the beginning of 1984, and following considerable correspondence and consultation among HRC and UN organizations, funds have been secured for the 1984-1986 Work Programme as follows:

REDP Phase II	US $100,000
UNDP allocation	US $200,000

plus inputs from the Chinese Government, focal points and backstopping by UNIDO.

These funds are limited, and do not fully cover the proposals put forward by the RN-SHP Interim Co-ordinator (see separate report). Thus, there will have to be some re-allocation of funds and/or fresh approaches to donor organizations to meet the anticipated shortfall.

2. Present difficulties

Apart from the shortage of funds in quantitative terms, there is also a problem in the qualitative nature of the present sources of funds. By this is meant:

a) the lack of secure sources of income to provide continuity and avoid the peaks and troughs in activity that have occurred in the past. In other words, we need to have enough sources to form a "regulating reservoir".

b) our funding has mainly come from a single source in the past, i.e. the UN system. While this has been relatively generous, and appreciated by RN-SHP Focal Points, it is only prudent to throw our net wider. In this way, the level of funding will not only be maintained but can be expanded. This is in line with the REDP philosophy that Phase II funds should have a catalytic role in attracting funds from other sources.

It is evident that within the RN-SHP, we have a lot of "installed capacity", not just at HRC but at other SHP Focal Points too. Thus, if

we are to have a reasonable load factor for member focal points, especially those hosting or managing decentralized activities, then we must increase our dependable inflow of funding.

3. Proposals for the future

The TAG participants may wish to consider how to tackle the problem areas cited above in the context of resources available in the participant's own country, and existing contacts with donor agencies.

HRC has had several informal contacts in the past year or so with interested organizations, see Table 1, but it is too early in most cases to say if these will bear fruit. It seems they require follow-up action through visits and firm project proposals.

One concrete example of where REDP money has been successfully used as "seed money" to attract other funds is the Electronic Load Controller (ELC) co-operative research project. The co-sponsor in this case is ITDG of the UK, who have agreed to provide one or two consultancy visits plus 2 sets of ELC kits for local assembly in China. The background to this project goes back to the Nairobi conference (September 1981) when the director of HRC had informal discussions with representatives from ITDG. This led to field testing of ELCs in China in co-operation with ITDG in September 1982. Since the ELC's performance was promising, it was decided that further R+D work should be done as a co-operative research project in the 1984-86 RN-SHP Work Programme. A project proposal was drafted in November 1984 and sent to selected focal points for discussion. It is hoped to have a project group meeting in early 1985.

Table 1 Sources of funding being pursued by HRC on behalf of the RN-SHP

No.	Potential Donor Organization	Contact person	Initial Contact Date	Form of co-operation	Present Status
1	ITDG, UK	Mr.D.Wright, General Manager	early 1984	funding of consultants and core parts of electronic load controller	Project proposal sent out; project meeting planned for early 1985
2	ESCAP	Dr.L.Fan, Chief Natural Resources Division	May 1984	funding of selected RN-SHP activities	Modified Project proposal accepted; ESCAP currently seeking donor agencies
3	C N R (National Research Council) Italy	Prof. E.Raiteri, Univ. of Genoa	Oct. 1983	co-operation in joint research activities and surveys	at discussion stage; concrete proposals to be prepared
4	NRECA, USA	Mr.Clark Ms.E.Graham	May, Nov. 1984	co-operation in training and information	at discussion stage

No.	Potential Donor Organization	Contact person	Initial Contact Date	Form of co-operation	Present Status
5	IDRC, Canada	Mr.H.Krugman	July 1984	not yet defined	initial contacts and discussion through correspondence; personal visit planned by IDRC
6	ILO	Mr.E.Fry, Training Adviser, Inst of Engineering, Nepal	Sept. 1984	Training for Nepali SHP trainers	formal programme being drafted
7	Leyland, Watson and Noble (engineers consulting), New Zealand	B.Leyland, Partner	Sept. 1984	co-operation in producing SHP design manual	under discussion
8	NORAD	Dr.Aamodt, VHL, Norway	Sept. 1984	not yet specified	awaiting response

As regards the other items in Table 1, they are at various degrees of discussion. Two points are worth noting:

a) it is important to maintain informal contacts, through visits and with a wide spread of organizations and individuals in order to gain "market information" on donor agency interests;
b) it is necessary to prepare concrete proposals if any progress in obtaining funds is to be achieved.

There are obviously a lot of agencies both within and outside the UN system that remain untapped. The TAG meeting may wish to consider which agencies should be contacted, and with what projects i.e. draw up a priority list of donor agencies and project proposals, bearing in mind the catalytic role of funds already allocated to RN-SHP activities.

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Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

HANGZHOU REGIONAL CENTRE -

BRIEF REPORT ON PROGRESS SINCE NOVEMBER 1981*

Prepared by

Interim Co-ordinator of the
Regional Network for Small Hydropower

* This document has been reproduced without formal editing.

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1. GENERAL INTRODUCTION

The Hangzhou Regional Centre (Asia-Pacific) for Small Hydro Power, also known as HRC, was set up after the signing of the Project Document on 4th November 1981 by UNDP (United Nations Development Programme) and China's Ministry of Foreign Economic Relations and Trade. This Document represents the successful conclusion of several years of preparatory work and discussions at various international conferences and Workshops. With the growing importance of Small Hydro Power (SHP) in the Asia-Pacific Region, there was an increasing need for a SHP Centre to promote regional and international co-operation, and to co-ordinate regional information exchange and technology transfer. In view of its extensive experience in SHP and the Government's positive support, it was considered by participants at several conferences that China was an appropriate choice of location.

The Project Document stipulated that the Chinese side would invest 5.5 million Yuan (RMB) (approx US $2.75 million) for the planned construction of buildings; UNDP would donate US $460,000 for the purchase of equipment.

The main tasks of the Centre are:

1. Training
2. Information
3. Research + Development
4. Advisory and consultancy services

HRC serves both as the national institution for Small Hydro Power (SHP) activities as well as a Regional Centre for the Asia-Pacific region. Furthermore, HRC acts as the Interim Secretariat for the Regional Network on SHP, which consists of Focal Points nominated by

governments in the region. SHP refers to unit capacity of less than 6 MW or total installed capacity of less than 12 MW.

2. MAJOR ACTIVITIES COMPLETED

2.1 Organization, Personnel and Buildings

HRC is based on a national institution i.e. the Institute of Exploitation, Design and Research for SHP. Present technical staff amount to 30 people, of whom 25 are professional engineers (6 senior engineers) in different areas of expertise:

planning
energy
hydrology
hydraulic structures
electrical machinery
hydraulic machinery
economics
geology

Apart from the above, the Centre has a UN consultant under the TOKTEN scheme, Dr.Eugene Chang.

Buildings --- The 1st phase office and accommodation buildings have been completed. See section 4 for details of the second phase.

Equipment and spares funded by UNDP amount to US $400,000, and some of the major items include:

audio-visual equipment
language laboratory system
microfilm system
photocopying and duplicating equipment
micro-computer
simultaneous translation system
vehicles
colour processing equipment

2.2 Main Work Activities

During the present phase of establishment of the Centre, the following tasks were accomplished;

Meetings and Training:

12/7/82 - 17/7/82. Senior Experts Meeting on SHP in the Asia-Pacific Region, held at Hangzhou. 12 participants from 10 developing countries plus related UN personnel attended. SHP training, information and research priorities were discussed, plus the setting-up of a regional network and the 1982-84 work programme of HRC.

22/5/83 - 23/6/83. 1st Training Workshop on SHP for Asia-Pacific region, held at Hangzhou and sponsored by UNDP, UNIDO, ESCAP, RCTT and HRC. 14 participants from 8 countries attended. 11 volumes of teaching materials were prepared by HRC. 13 Chinese and 4 foreign lecturers participated. The Workshop achieved very good results and was highly commended by all those who attended.

May 1983. REDP Steering Committee met in Bangkok, and following their decisions, HRC assumed the role of Interim Secretariat of the Regional Network (RN-SHP). HRC's Director Mr.Zhu Xiaozhang has also taken on the post of Co-ordinator for an interim period. The Co-ordinator sent out a formal letter to over 20 countries in the Region, and has so far received nominations for SHP Focal Points from Fiji, Malaysia, Philippines, Thailand, Indonesia, Pakistan, Sri Lanka, Nepal and Papua New Guinea.

Feb.1984. Conghua Study Tour. HRC helped to host a four-day Study Tour of 10 SHP stations in Conghua, Guangdong Province. The 24 participants came from 8 countries and had just attended the 1st International Conference on Small Hydro, organised by "International Water Power and Dam Construction".

3/9/84 - 14/9/84. 2nd Training Workshop on SHP for the Asia-Pacific region (Hydrology), held at Hangzhou, and sponsored by UNDP,

UNIDO and HRC. 12 participants from 9 countries attended, and there were 3 Chinese and 1 Norwegian lecturer. Practical excercises, discussions, case studies and site visits were also included in this activity. Copies of the comprehensive lecture notes are available for sale.

Information Work:

a) "Development of SHP in China". This paper has been published in Renewable Sources of Energy Vol IV. "SHP Development", ECDC-TCDC, ESCAP/UNIDO.

b) "Summary of development and future trends in SHP world-wide" (in Chinese). This book has been edited and published by HRC.

c) Various papers have been written for international conferences and magazines e.g.
"The Experiences of Small Hydro Power Construction in China" --- First China-US Conference on Energy, Resources and Environment, (Nov.1982)
"Cascade Development and Multi-purpose Utilization of Small Rivers" --- First International Conference on Small Hydro, Singapore (Feb 1984)
"China's Small Hydro makes Big Impact on Rural Areas" published in "World Water" (June 1984)
"How SHP is helping China's rural electrification programme" --- prepared for Energy REsearch Group IDRC, Canada (Sept 1984)
"SHP and Rural Grids" --- TEPCON'84, Teheran (Oct 1984)
"Planning and operation of a local grid where small hydro is the main power source"
"Medium and small masonry arch dams in China" --- both prepared for "Water Power + Dam Construction", and planned for publication in Feb. 1985.

d) 11 volumes of teaching material for the 1st Training Workshop have been produced, and are being edited for future publication.

f) The first SHP Newsletter manuscript was completed in October 1983, and printed and distributed by UNIDO, Vienna in May 1984. The Second issue was distributed in Nov 1984. Future issues are available on request.

g) Currently collecting information to produce a roster of international SHP experts, research organizations, equipment manufacturers etc.

Apart from the above, 9 video films on various aspects of SHP have been produced.

Co-operative Research and Development:

Electronic Load Controller --- In Sept 1982, HRC collaborated with Intermediate Technology Development Group (ITDG), UK, on a project on the application of a 60 kW electronic load controller. After 330 hours of field operation, it was concluded that the controller was technically very good but produced some waveform distortion of the output voltage. The cost was a few times higher than a Chinese-made governor; however, the possibility of a licensing arrangement for local assembly of controller kits in China is being explored under a new project co-sporsored by UNDP/UNIDO/REDP/ITDG/HRC and selected Asia-Pacific countries. The locally assembled controllers will be field tested in China and other countries in the Region, with particular emphasis on finding economic end-uses for the ballast load.

SHP Automation and Remote control --- On-site investigations have been completed, and a suitable station site on the Panxi River, Zhejiang Province, consisting of 5 cascade stations has been selected. Various institutes in China are co-operating in this project, and the Ministry of Water Resources and Electric Power has formally approved the project and contributed towards the project budget. Design of system hardware and software is almost complete. Project design and equipment specification for a SCADA system and programmable controllers for purchase abroad are complete, and actual field work on machine set renovation has already started. For this project, we have engaged the help of another UN TOKTEN consultant, Dr.A.S.Tseng. The aim of the project is to develop a system to give an intermediate level of automation, appropriate to the needs of developing countries.

Consultancy services:

Two Chinese Senior Engineers carried out a one month field study in Vermont, USA to prepare a renovation scheme for an abandoned SHP site. Their proposed scheme was cheaper than those from US firms and also conformed with the strict local environmental requirements.

Liaison with other organizations and individuals:

Over 80 overseas guests have visited the Centre including various UN officials, university professors, SHP engineers and experts. In addition we are gradually building up a list of contacts and sister organizations around the world, and have a mailing list with names from over 50 countries at present.

Furthermore, a 3-man Consultation Mission of the RN-SHP Secretariat visited 4 Asia-Pacific countries in Oct/Nov 1984 to strengthen ties in the Network and exchange ideas on future activities.

3. WORK FOR THE NEXT PHASE

HRC's Work Programme for the near future includes the following main tasks:

Training

Every year, 1-2 courses are to be held. A training Workshop on Analysis of Economic Feasibility of SHP is scheduled for Nov 1985.

Video recording of further training films on selected topics to supplement the teaching materials of the 1st Training Workshop.

Information work

SHP Newsletter to be produced quarterly. Copies are available on request. We welcome contributions from the Region especially on practical examples of appropriate technology in the field of SHP.

Editing and publishing a roster of SHP experts, equipment manufacturers, SHP bibliography and list of SHP stations in operation. The data is to be stored in our in-house computer for easy information retrieval.

Preparation of special issue on SHP in China, to be published in "International Water Power and Dam Construction" early 1985.

Preparatory work for the 2nd International Small Hydro conference to be held in Hangzhou, China 1986, and co-sponsored by "International Water Power and Dam Construction".

Translation of abstracts of articles on SHP published in Chinese journals.

Policy-making

A high-level seminar on national SHP policies and regional co-operation is planned in conjunction with the inauguration ceremony of new RN-SHP office premises in the 4th quarter of 1986.

Research and Development

--- Completion of the pilot project on remote control of river cascade development stations
--- Further research on the application of electronic load controllers
--- Investigation of network planning in China's rural electrification programme.
--- Other topics as proposed by Asia-Pacific countries

Short-term consultancy and visits

It is expected that several short-term consultancy visits will be made, including some to developing countries for the UN-DTCD programme on the evaluation of small hydropower resources. Consultancy visits can also be made between RN-SHP Network members for exchange of experience. Furthermore, consultancy teams may draw on experts from several countries in the Region.

4. LOOKING AHEAD

Completion of the Centre's buildings has been delayed for various reasons. However, the Ministry of Water Power and Electric Resources has now resolved to accelerate the construction and hence final completion of the Centre. This has been combined with a modified organizational structure to suit the Centre's needs.

In this second phase, new buildings are under construction with floor area 10,000 m^2, of which 6,000 m^2 will be a new block for training, information, research and offices together with guest accommodation. This is planned for completion in the second half of 1986, and will provide up-to-date facilities including conference hall, language laboratory, reference library and video film studio.

HRC welcomes future co-operation with sister SHP organizations in any part of the world. We are having increasing contact with interested parties not just from within our Regional Network but from countries all over the world. We are also exploring various forms of co-operation, including bilateral and multi/bilateral contacts.

We hope that this growing international co-operation in the field of Small Hydro Power will help to promote the application of SHP technology, a technology which is, after all, appropriate to both the developing and developed countries.